List of Claims:

1. (previously presented) A method for transmitting data in a pulse code modulation (PCM) modem system, said method comprising the steps of:

initializing a training mode characterized by a training interval;

adjusting spectral shaping in a transmit modem during at least a portion of said training interval to thereby reduce color in the spectrum of transmit signals, relative to signals transmitted by said transmit modem during a normal data mode, wherein said adjusting step comprises the step of decreasing the number of redundancy bits associated with a line coder;

transmitting a predetermined training sequence from said transmit modem during said training interval;

readjusting spectral shaping in said transmit modem to thereby increase color in the spectrum of signals transmitted after said training interval, relative to signals transmitted by said transmit modem during said training interval, wherein said readjusting step comprises the step of increasing the number of redundancy bits associated with said line coder; and

transmitting data symbols in accordance with a PCM protocol.

2. (original) A method according to claim 1, further comprising the step of adaptively adjusting at least one equalizer located in a receive modem in response to said training sequence.

3. (original) A method according to claim 1, wherein said training sequence is characterized by a substantially white spectrum over a predetermined bandwidth.

4. (twice amended) A training method for use with a pulse code modulation (PCM) modem system, said method comprising the steps of:

initializing a training mode for a PCM transmitter modem configured to transmit colored

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transmit signals during a data mode and a PCM receiver modem configured to receive and process said colored transmit signals during said data mode;

transmitting a predetermined training sequence from said PCM transmitter modem to said PCM receiver modem during said training mode said training sequence having a less-colored spectrum, relative to said colored transmit signals, over a limited bandwidth, wherein the spectrum of said training sequence is characterized by a reduction in DC suppression relative to said transmit signal;

adaptively adjusting a transfer function of at least one equalizer resident at said PCM receiver modem during said training mode; and

switching said PCM [transmit] transmitter modem from said training mode to said data mode following said training mode.

5. (twice amended) A pulse code modulation (PCM) modem comprising:

means for shaping a spectrum of a PCM transmit signal, said means for shaping reducing spectral components near DC in said PCM transmit signal;

a logic circuit element configured to generate a predetermined training sequence having at least a first portion characterized by a substantially white spectrum over a predetermined bandwidth, wherein said predetermined training signal includes a second portion characterized by a colored spectrum over said predetermined bandwidth, relative to the substantially white spectrum of said first portion;

means for selecting an output from one of said means for shaping and said logic circuit element; wherein said means for selecting selects output associated with said logic circuit element during a training mode; and

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said means for selecting selects output associated with said means for shaping during a data mode.

6. (original) A PCM modem according to claim 5, wherein said means for shaping comprises a line coder.

7. (original) A PCM modem according to claim 5, wherein said transmit signal exhibits spectral nulls near DC caused by said means for shaping.

8. (original) A PCM modem according to claim 5, wherein said second portion is configured such that the spectrum of said second portion includes suppressed spectral components near DC.

9. (original) A PCM modem according to claim 5, wherein said second portion is configured such that the spectrum of said second portion emulates the spectrum of an output signal from said means for shaping.

10. (twice amended) A training method for use with a pulse code modulation (PCM) modem system, said method comprising the steps of:

initializing a training mode for a PCM transmitter modem configured to transmit colored transmit signals during a data mode and a PCM receiver modem configured to receive and process said colored transmit signals during said data mode;

transmitting a predetermined training sequence from said PCM transmitter modem to said PCM receiver modem during said training mode, said training sequence having a less-colored spectrum, relative to said colored transmit signals, over a limited bandwidth, wherein said transmitting step comprises the steps of transmitting a first portion of said predetermined training sequence having relatively white spectral characteristics within said limited bandwidth and

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transmitting a second portion of said predetermined training sequence having relatively colored spectral characteristics within said limited bandwidth, said second portion being transmitted after said first portion;

adaptively adjusting a transfer function of at least one equalizer resident at said PCM receiver modem during said training mode; and

switching said PCM [transmit] transmitter modem from said training mode to said data mode following said training mode.

11. (original) A method according to claim 10, wherein said second portion said predetermined training sequence is configured to emulate the spectrum of said colored transmit signals.

12. (amended) A training method for use with a pulse code modulation (PCM) modem system, the method comprising:

initializing a training mode for a PCM transmitter modem configured to transmit colored transmit signals during a data mode;

transmitting a predetermined training sequence from the PCM transmitter modem during the training mode, the training sequence having a less-colored spectrum, relative to the colored transmit signals, over a limited bandwidth, wherein the spectrum of the training sequence is characterized by a reduction in DC suppression relative to the colored transmit signals; and

switching the PCM [transmit] transmitter modem from the training mode to the data mode following the training mode.

13. (previously presented) The method of claim 12, wherein the training sequence is characterized by a substantially white spectrum over a predetermined bandwidth.

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14. (previously presented) A training method for use with a pulse code modulation (PCM) modem system, comprising:

initializing a training mode for a PCM receiver modem configured to receive and process a colored receive signals during a data mode;

receiving a predetermined training sequence during the training mode, the training sequence having a less-colored spectrum, relative to the colored receive signals, over a limited bandwidth, wherein the spectrum of the training sequence is characterized by a reduction in DC suppression relative to the colored receive signals; and

adaptively adjusting a transfer function of at least one equalizer resident at the PCM receiver modem during the training mode; and

switching the PCM receiver modem from the training mode to the data mode following the training mode.

15. (previously presented) The method of claim 14, wherein the training sequence is characterized by a substantially white spectrum over a predetermined bandwidth.

16. (twice amended) A training method for use with a pulse code modulation (PCM) modem system, said method comprising:

initializing a training mode for a PCM transmitter modem configured to transmit colored transmit signals during a data mode;

transmitting a predetermined training sequence from the PCM transmitter modem during the training mode, the training sequence having a less-colored spectrum, relative to the colored transmit signals, over a limited bandwidth, wherein the transmitting step comprises transmitting a first portion of the predetermined training sequence having a relatively white spectral

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characteristics within the limited bandwidth and transmitting a second portion of the predetermined training sequence having a relatively colored spectral characteristics within the limited bandwidth, the second portion being transmitted after the first portion; and

switching the PCM [transmit] transmitter modem from the training mode to the data mode following the training mode.

17. (previously presented) The method of claim 16, wherein the training sequence is characterized by a substantially white spectrum over a predetermined bandwidth.

18. (amended) A training method for use with a pulse code modulation (PCM) modem system, said method comprising:

initializing a training mode for a PCM receiver modem configured to receive colored transmit signals during a data mode;

receiving a predetermined training sequence [from] by the PCM receiver modem during the training mode, the training sequence having a less-colored spectrum, relative to the colored transmit signals, over a limited bandwidth, wherein the receiving step comprises receiving a first portion of the predetermined training sequence having a relatively white spectral characteristics within the limited bandwidth and receiving a second portion of the predetermined training sequence having a relatively colored spectral characteristics within the limited bandwidth, the second portion being received after the first portion; and

switching the PCM [receive] receiver modem from the training mode to the data mode following the training mode.

19. (previously presented) The method of claim 18, wherein the training sequence is characterized by a substantially white spectrum over a predetermined bandwidth.

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20. (amended) A training method for use with a pulse code modulation [PCM] (PCM)

modem system, the method comprising:

initializing a training mode for a PCM modem configured to transmit a colored transmit

signal during a data mode;

transmitting a predetermined training sequence from the PCM modem during the training

mode, the predetermined training sequence having a less-colored spectrum, relative to the

colored transmit signal, over a limited bandwidth; and

switching the PCM modem from the training mode to the data mode following said

training mode.

21. (amended) The method of claim 20, further comprising [the steps of]:

disabling a spectral shaping function at the PCM modem during the training mode, the

spectral shaping function providing a DC null in the spectrum of signals transmitted by the PCM

modem; and

enabling the spectral shaping function at the PCM modem after the training mode to

thereby facilitate transmission of colored signals by the PCM modem.

22. (previously presented) The method of claim 21, wherein the spectral shaping function

comprises line coding.

23. (amended) A training method for use with a pulse code modulation [PCM] (PCM)

modem system, the method comprising:

receiving a colored transmit signal at a PCM [receive] receiver modem having a data

mode and a training mode, the PCM [receive] receiver modem configurable to process the

colored transmit signal during the data mode;

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processing a predetermined training sequence during the training mode, the training

sequence having a less-colored spectrum, relative to the colored transmit signal, over a limited

bandwidth;

adaptively adjusting a transfer function of at least one equalizer resident at the PCM

receiver modem during the training mode; and

switching the PCM [receive] <u>receiver</u> modem from the training mode to the data mode

following the training mode.

24. (previously presented) A pulse code modulation (PCM) modem comprising:

a line coder, the line coder reducing spectral components near DC in a PCM transmit

signal;

a logic circuit element configured to generate a predetermined training sequence having at

least a first portion characterized by a substantially white spectrum over a predetermined

bandwidth, wherein the predetermined training signal includes a second portion characterized by

a colored spectrum over the predetermined bandwidth, relative to the spectrum of the first

portion;

a switch element, the switch element selecting an output from one of the line coder and

the logic circuit element; wherein

the switch element selects output associated with the logic circuit element during a

training mode; and

the switch element selects output associated with the line coder for shaping during a data

mode.

25. (previously presented) The PCM modem of claim 24, wherein the transmit signal

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exhibits spectral nulls near DC caused by the line coder.

26. (previously presented) The PCM modem of claim 24, wherein the second portion is configured such that the spectrum of the second portion includes suppressed spectral components near DC.

27. (previously presented) The PCM modem of claim 24, wherein the second portion is configured such that the spectrum of the second portion emulates the spectrum of an output signal from the line coder.

28. (previously presented) A modem comprising:

a line coder, the line coder reducing spectral components near DC in a PCM transmit signal;

a logic circuit configured to generate a training sequence having at least a first portion characterized by a substantially white spectrum over a predetermined bandwidth and a second portion characterized by a colored spectrum over the predetermined bandwidth relative to the spectrum of the first portion;

a switch element, the switch element selecting an output from one of the line coder and the logic circuit element; wherein

the switch element selects output associated with the logic circuit element during a training mode; and

the switch element selects output associated with the line coder for shaping during a data mode.

29. (previously presented) The modem of claim 28, wherein the transmit signal exhibits spectral nulls near DC caused by the line coder.

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